

Hang Gliders

The hang gliders pictured are built by U.S. Moyes, Inc., Bridgman, Michigan, whose "kites" have set a number of records, including last year's world flexible wing distance record of 111 miles. The Moyes design is based in part on NASA technology developed as a once-considered alternative to parachutes for manned spacecraft post-orbital descent systems.

Hang gliders are modern versions of 19th century man-carrying kites and there have been many experimenters. Consensus holds that one of the foremost contributors to the technology was Francis M. Rogallo, a former employee of NASA and its predecessor organization, the National Advisory Committee for Aeronautics. In the latter 1940s, Rogallo and his wife Gertrude began research on flexible, controllable, fabric airfoils with a delta—V-shaped—configuration intending them for use on inexpensive private aircraft. The Rogallos were issued a flex-wing patent in 1951 and they refined their designs during the 1950s. When NASA was in the early stages of manned spacecraft development,

the Rogallo wing aroused interest as a possible means of lowering a spacecraft to Earth after re-entry; its potential advantage over parachutes was the ability to glide over long distances to a controlled touchdown on land rather than in the ocean. Ultimately, NASA decided to stick with advanced parachute descent systems—but in the interim the agency conducted extensive wind tunnel test and development of Rogallo wings and substantially broadened the flexible airfoil technology base.

While this work was under way, Australian John Dickenson was experimenting with a kite design for water skiing. A magazine article on the Rogallo wing suggested to Dickenson a safer, more stable design than he had previously considered. Later, Dickenson obtained detailed technical information from NASA. The basic design of the kite was his own, but some of the Rogallo technology—particularly the airfoil frame—was incorporated. In 1967, Dickenson met Bill Moyes, who formed an Australian company to build hang gliders. The Dickenson kite served as prototype for the Australian Moyes line and as forebear of the models later produced by U.S. Moyes. The latter company is now the sixth largest U.S. manufacturer of hang gliders.

